CLAIMS

A pretreatment method for coating comprising treating a substance to be treated with a chemical conversion coating agent to form a chemical conversion coat, wherein the chemical conversion coating agent comprises at least one kind selected from the group consisting of zirconium, titanium and hafnium and fluorine,

the chemical conversion coat has a fluorine concentration of 10% or less on the atom ratio basis, and

at least a part of the substance to be treated is an iron material.

The pretreatment method for coating according to Claim
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wherein the chemical conversion coating agent contains at least one kind selected from the group consisting of magnesium, calcium, zinc, a silicon-containing compound and copper in order to set the fluorine concentration of the chemical conversion coat to 10% or less on the atom ratio basis.

The pretreatment method for coating according to claim

wherein the chemical conversion coating agent contains
at least one kind selected from the group consisting of a
water-borne resin containing an isocyanate group and/or a
melamine group (i), a mixture of a water-borne resin, a
polyisocyanate compound and/or a melamine resin (ii) and a
water-soluble resin having a constituent unit expressed by the
chemical formula (1):

$$\begin{array}{c} \leftarrow \text{CH}_2 - \text{CH} \rightarrow \\ \text{NH}_2 \end{array} (1)$$

and/or the chemical formula (2):

$$\begin{array}{c} \leftarrow \text{CH}_2 - \text{CH}_{-} \\ \downarrow \\ \text{CH}_2 \\ \downarrow \\ \text{NH}_2 \end{array} (2)$$

in at least a part thereof (iii).

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4. The pretreatment method for coating according to any of Claims 1 to 3, $\,$

wherein the chemical conversion coat is heated and dried at a temperature of 30° C or more after the treatment by the chemical conversion coating agent in order to set the fluorine concentration in the chemical conversion coat to 10% or less on the atom ratio basis.

5. The pretreatment method for coating according to any of Claims 1 to 4, $$

wherein the chemical conversion coat is treated at a temperature from 5 to 100°C with a basic aqueous solution having a pH of 9 or more after the treatment by the chemical conversion coating agent in order to set the fluorine concentration in the chemical conversion coat to 10% or less on the atom ratio basis.

6. The pretreatment method for coating according to any of Claims 1 to 5,

wherein the chemical conversion coating agent contains 20 to 10000 ppm of at least one kind selected from the group consisting of zirconium, titanium and hafnium in terms of metal, and has a pH of 1.5 to 6.5.